

Work Order ID 69978

Wednesday, May 25, 2011 9:04:31 AM



Page 1

Item ID: D206-667-247TRN

Accept



Setup Start



Revision ID:

Stop



Item Name: Crosstube Assembly, Mid Aft

Start Date: 5/25/2011 Start Qty: 1.00



Cust Item ID:

Required Date: 6/24/2011 Req'd Qty: 1.00



Customer:

Reference:

Approvals:

Process Plan:

P

Date: 11-05-25

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run

Start



Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr

Revision Nbr

D206-667-247

A

100

0.00



MORI SEIKI CNC LATHE LARGE

Mori Seiki

Memo

0.00

Mori Seiki CNC Lathe Large

1-Fill tube with sand & install plugs DTxxxx on both ends as per Folio FB030
2-Turn first side as per Folio FB030
3-File down transition lines smooth.

MM.L 11/06/22

110

0.00



QC1- Inspect dimensions to dimension sheet

QC

Memo

0.00

Quality Control

MM.L 11/06/23

120

0.00



MORI SEIKI CNC LATHE LARGE

Mori Seiki

Memo

0.00

Mori Seiki CNC Lathe Large

1-Turn second side as per Folio FB030
2-File down transition lines smooth.
3-Remove sand and plugs

MM.L 11/06/22

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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NOTE: Date & initial all entries

Work Order ID 69978

Wednesday, May 25, 2011 9:04:32 AM

Page 2

Item ID: D206-667-247TRN

Accept

Revision ID:

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Start Date: 5/25/2011 Start Qty: 1.00

Required Date: 6/24/2011 Req'd Qty: 1.00

Cust Item ID:

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run

Start

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

130

QC1- Inspect dimensions to dimension sheet

0.00



QC

Memo

0.00

Quality Control

11/06/23

1 1

140

QC8- Inspect parts - second check

0.00



QC

Memo

0.00

Quality Control

11/16/23

1

150

Crosstubes Chemical Conversion

0.00



HandFXtube

Memo

0.00

Hand Finishing Crosstubes

SAO

11-06-23

①

W/O:		WORK ORDER CHANGES					
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Page 3

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Accept

Setup Start

Revision ID:

Stop

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Start Date: 5/25/2011 Start Qty: 1.00

Cust Item ID:

Required Date: 6/24/2011 Req'd Qty: 1.00

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
160 QC Quality Control	QC3- Inspect Part Finish Memo	0.00 0.00				1	0	BE	11/06/23
170 Packaging Packaging Packaging	Packaging Memo Identify and stock in kanban rack Location: LANDING GEAR	0.00 0.00	SAD	11-06-23		1			
180 QC Quality Control	QC21- Final Inspection - Work Order Release Memo	0.00 0.00							11/06/27 MF 11-06-24

W/O:		WORK ORDER CHANGES					
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Picklist Print

Wednesday, May 25, 2011 9:04:38 AM

Page 1

Work Order ID: 69978



Parent Item: D206-667-247TRN



Parent Item Name: Crosstube Assembly, Mid Aft


Start Date: 5/25/2011

Required Date: 6/24/2011

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP rev:A 11.01.06 new issue DD verf:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D6004-115 		Manufactured	No			100	Each	34.0000	1	1			

Crosstube Material

Location

Loc Qty

Loc Code

LG

34

34685

5

38336

29

name 11/106/21

Dart Aerospace Ltd

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NOTE: Date & initial all entries

DART AEROSPACE LTD		Work Order: 69978
Description: Crosstube Assembly		Part Number: 06-667-247
Inspection Dwg:	Rev: A	Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

Inspection Sheet	Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
SIDE A	2.490	± 0.005	2.495	✓		mic	CNC-04
	2.025	± 0.005	2.030	✓		"	
	2.079	± 0.005	2.084	✓		"	
	2.145	± 0.005	2.150	✓		"	
	2.209	± 0.005	2.213	✓		"	
	2.287	± 0.005	2.290	✓		"	
	2.363	± 0.005	2.364	✓		"	
	0.200	± 0.010	0.200	✓		vern	JF-01
	4.438	± 0.010	4.468	✓		"	
	R 0.063	± 0.010	0.063	✓		RG	
SIDE B	2.490	± 0.005	2.494	✓		mic	CNC-04
	2.025	± 0.005	2.030	✓		"	
	2.079	± 0.005	2.084	✓		"	
	2.145	± 0.005	2.150	✓		"	
	2.209	± 0.005	2.214	✓		"	
	2.287	± 0.005	2.292	✓		"	
	2.363	± 0.005	2.365	✓		"	
	0.200	± 0.010	0.200	✓		vern	JF-01
	4.438 4.438	± 0.010	4.468	✓		"	
	R 0.063	± 0.010	0.063	✓		RG	
	R 2.00	± 0.010	2.00	✓		"	
	R 0.063	± 0.010	0.063	✓		"	
	99.76	± 0.020	99.76	✓		tape	mm.L-02

Measured by: mm.l/jay	Audited by: [Signature]	Preliminary Approval:
Date: 11/06/21	Date: 11/6/23	Date:

Rev	Date	Change	Revised by	Approved
B	10.04.14	Added preliminary approval	KJ	

10.04.15

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Item	Qty -247	Part Number	Description
1	X	D206-667-247	CROSSTUBE ASSEMBLY (206L MID AFT)
2	1	D6004-115	CROSSTUBE
3	2	D2873-043	NUT PLATE
4	2	D2873-045	NUT PLATE
5	2	D2892-1	SUPPORT
6	4	D3595-063-450	RUBBER CUSHION
7	4	MS21920-22	CLAMP
8	14	MS20601AD4W10	RIVET (OR NAS9302B-4-10)
9	A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299- 947-100, TYPE II, CLASS 2 ADHESIVE)

GENERAL NOTES:

- 1) MATERIAL: MANUFACTURED FROM D6004-115
FINISHED LENGTH = 99.76±0.020
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART QSI 005 4.2
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: SCRIBE DART PART NUMBER "D206-667-247" AND BATCH NUMBER ON
INSIDE OF CLIFF PER DART QSI 044 6.4 (VIBRATING STYLUS).
- 7) WEIGHT: 21.1 lbs (-607 = 17.7 lbs)
- 8) PART IS SYMMETRIC ABOUT CENTERLINE.
- 9) RUN CUTTER OFF PART WHERE INDICATED. BLEND OUT EDGE LONGITUDINALLY.
TRANSITION SHOULD BE SMOOTH.
- 10) BEND PROGRESSIVELY WITH A MINIMUM OF 10 PASSES. MAXIMUM TUBE FLATTENING DUE
TO BENDING IS 6% BASED ON O.D.
- 11) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- 12) INSTALL D2892-1 SUPPORT USING 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 PER QSI
015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- 13) INSTALL MS21920-22 CLAMPS WITH D3595-063-450 RUBBER CUSHIONS TO SECURE THE
D2892-1 SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMP MECHANISMS ARE
LOCATED ON CROSSTUBE SUPPORTS.
- 14) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE
OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS
SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT
LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS ARE SHOWING IN
SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENTS
WITHOUT NOTICE
WORK ORDER
NO. 69978

2011-05-25

RELEASED
2011-05-25

A	NEW ISSUE	CP	10.12.23
REV.	DESCRIPTION	BY	DATE
DESIGN			
DRAWN			
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	10.12.23		

DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWING NO. D206-667-247	REV. A SHEET 1 OF 4
TITLE CROSSTUBE ASS'Y (206L MID AFT)	SCALE NTS

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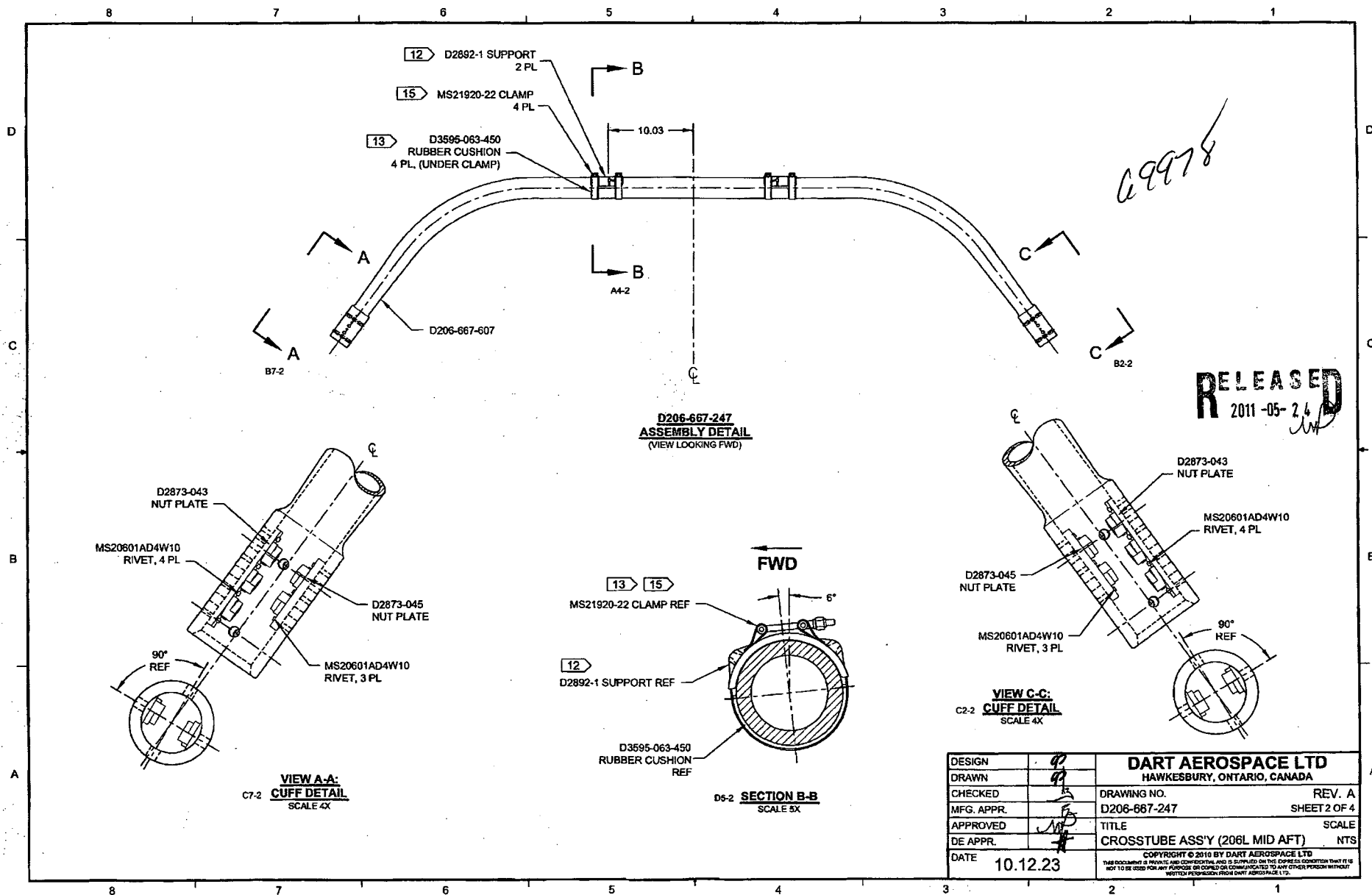
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SEE DETAIL L
B7-4

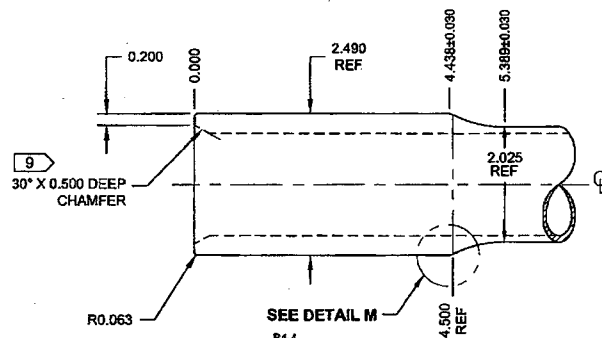
R100.0 TRANSITION
BETWEEN TAPERED
SECTIONS

R100.0 TRANSITION
BETWEEN TAPERED
SECTIONS

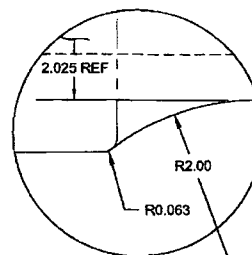
TAPER UNIFORMLY FROM
2.363 REF THROUGH TO 2.522 REF
RUNNING OFF PART

SEE DETAIL N
B2-4

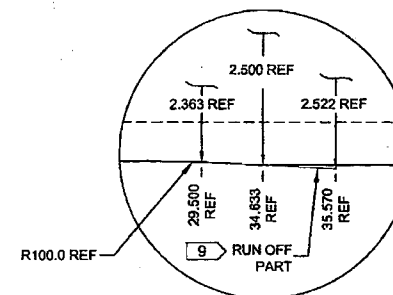
TURNING DETAIL



C7-4 **DETAIL L: CROSSTUBE CUFF**
SCALE 2.5X



B6-4 **DETAIL M:
CUFF TRANSITION**
NOT TO SCALE



C4-4 **DETAIL N:
TAPER RUN-OFF**
NOT TO SCALE

RELEASED
2011-05-24

DESIGN	90	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA		
DRAWN	90			
CHECKED			DRAWING NO.	REV. A
MFG. APPR.			D206-667-247	SHEET 4 OF 4
APPROVED			TITLE	SCALE
DE APPR.			CROSSTUBE ASS'Y (206L MID AFT)	NTS
DATE	10.12.23	COPYRIGHT © 2010 BY DART AEROSPACE LTD <small>THIS DOCUMENT IS PRELIMINARY AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSES OR FOR DISSEMINATION TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.</small>		

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